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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/630,258	08/01/2000	Marc Hoffman	ADI-005XX	7200
207	7590	03/11/2004	EXAMINER	
WEINGARTEN, SCHURGIN, GAGNEBIN & LEOVICI LLP TEN POST OFFICE SQUARE BOSTON, MA 02109			DO, CHAT C	
			ART UNIT	PAPER NUMBER
			2124	
DATE MAILED: 03/11/2004				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/630,258	Applicant(s) HOFFMAN ET AL	
	Examiner Chat C. Do	Art Unit 2124	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 February 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This communication is responsive to Amendment B, filed 10/6/2003.
2. Claims 1-8 are pending in this application. Claims 1, 5, and 8 are independent claims. In Amendment B, claims 1, 5, and 8 are amended. This action is made non-final after a Request for Continued Examination filed.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1-8 are rejected under 35 U.S.C. 102(e) as being anticipated by Nakai et al. (U.S. 6,115,728).

Re claim 1, Nakai et al. disclose a method for computing a FFT in Figures 1-22 (first embodiment), the method comprising:

(a) receiving a N time-ordered first data values (Figure 3 discloses the data input arrive in time-order for every symbol $x(0)$ - $x(N-1)$ and Figure 7 FFT processing $[i+2]$);

(b) sequentially storing in a first memory each of N time-ordered first data values (Figure 3 RAM#0 and col. 8 lines 30-32) in the time order (and Figure 7 FFT processing $[i+2]$);

(c) storing in a second memory a plurality of twiddle factors in a bit reversed order (104 in Figure 1 and Figure 8);

(d) reading R input butterfly data values of N first data values where each of R butterfly data values are separated by N/R first data value in plurality of first data value (N = 32, R = 4, and separated by 8 different groups of input data);

(e) performing a radix R butter fly calculation on R butterfly input data to generate R butterfly output data values (Figure 4 stage 0, this is a standard method of implementing FFT, the left data are the data that read from the RAM#0 using RAM address generator);

(f) sequentially storing R butterfly output data values in sequential memory locations of a third memory (RAM#1 and col. 8 lines 30-32) in the order in which the output data values are used in the calculations in a next stage (and Figure 7 FFT processing [i+2] where the output of butterfly operation is store in the RAM in order to computing the output symbol in stage i+2); and

(g) performing steps (c) to (f) $N/R \times 2$ times (compute other groups 1-7 in Figure 4).

Re claim 2, Nakai et al. further disclose in Figure 6 the steps of replacing N of first data values in first memory (SYMBOL INPUT RAM) with selected ones of R butterfly output data stored in third memory location (SYMBOL OUTPUT RAM); and repeating steps (c) – (g) a total of $\log_r(n)$ times (Figure 32 wherein $r = 2$ and $n = 8$; therefore $\log_2(8) = 3$ stages to be performed and Figures 8 and 16).

Re claim 3, Nakai et al. further disclose in Figure 5 R is equal to 2 (middle box; radix-2 butterfly operation).

Re claim 4, Nakai et al. further disclose in Figure 5 R is equal to 4 (top box; radix-4 butterfly operation).

Re claim 5, it is an apparatus claim of claim 1. Thus, claim 5 is also rejected under the same rationale in the rejection of rejected claim 1.

Re claim 6, it is an apparatus claim of claim 3. Thus, claim 6 is also rejected under the same rationale in the rejection of rejected claim 3.

Re claim 7, it is an apparatus claim of claim 4. Thus, claim 7 is also rejected under the same rationale in the rejection of rejected claim 4.

Re claim 8, it is a DSP apparatus claim of claim 1. Thus, claim 8 is also rejected under the same rationale in the rejection of rejected claim 1.

Response to Arguments

5. Applicant's arguments filed 10/6/2003 have been fully considered but they are not persuasive.

a. The applicant argues in pages 6-9 for claims 1-8 that the cited reference by Nakai does not disclose or suggest the amended limitations wherein the data from the previous stage is written into memory locations of the third memory such that the data is ordered in memory in the same order in which the data is used in the calculations in the next stage.

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The examiner respectfully submits that Figure 7 clearly discloses the amended limitations cited above, particularly the second stage FFT processing [i+2]. In the second odd stage of FFT, the data (result of the first butterfly operation in the second stage) from the previous stage is written into memory locations of the third memory (RAM of second stage) such that the data is ordered in memory in the same order in which the data is used in the calculations in the next stage (the next butterfly operation is done by orderly reading/retrieve the data from stored RAM e.g. the first butterfly operation in the second time of the FFT processing [i+2] is using the first two order data from the RAM).

Conclusion

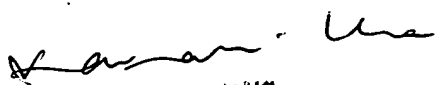
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chat C. Do whose telephone number is (703) 305-5655. The examiner can normally be reached on M => F from 7:00 AM to 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chaki Kakali can be reached on (703) 305-9662. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

Chat C. Do
Examiner
Art Unit 2124

December 4, 2003


KAKALI CHAKI
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100